

REMARKS

This is an application which had been previously finally rejected under various combinations of the following five references: BE 0544048 (Govaerts), U.S. Patent No. 5,567,187 (Bellinger), U.S. Patent No. 2,229,288 (Gilbert), U.S. Patent No. 6,045,408 (Takemasa) and JP 09-213436 (Ozaki). The previous rejections were appealed and in response to the appeal the prosecution of this application was reopened and new grounds of rejection were presented, as discussed below.

Claim Objections

Claim 10 was objected to due to an informality which has been corrected as proposed by the Examiner.

Claim Rejections – 35 U.S.C. § 102

Claims 1 – 3, 5 – 11 and 21 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,982,938 to Klumpp, Jr. The Examiner argues that Klumpp discloses an electrical terminal with a crimp flange (21) having a pair of upwardly-directed opposite side portions (22 – 24) and a bottom portion extending between and interconnecting the side portions. He also argues that this patent discloses an electrical terminal with at least one insulation piercing knife (26, 27) integral with the crimp flange and projecting from the bottom of the terminal into the space between the side portions and a blade (20) extending from the crimp flange for insertion into an electrical socket.

Among the rejected claims, claims 1 and 5 are the only independent claims, with the balance of the rejected claims depending either from claim 1 or claim 5.

Claim 1 as amended reads as follows:

An electrical terminal for mounting in a pre-formed channel in a plug housing, comprising:

- (a) a crimp flange having a pair of upwardly directed opposite side portions and a bottom portion extending between and interconnecting said side portions;
- (b) at least one insulation piercing knife integral with said crimp flange projecting from said bottom portion into the space between said side portions; and
- (c) a blade extending from said crimp flange for insertion into an electrical socket, said blade including a web portion connected to said crimp flange and a plurality of lance-formed barbs along said web portion for abutting

against a wall of the pre-formed channel to resist removal of said electrical terminal from said plug housing.

The insulation piercing terminal disclosed in Klumpp, Jr. is designed for use in a molded-in-place plug. Thus, a pair of the Klumpp, Jr. terminals are first attached to a pair of wires and then the plug is molded about the wires and the terminals to produce an integral terminal-bearing plug. Klumpp does not remotely suggest an electrical terminal that is mountable into pre-formed channels in a plug housing.

Claim 1 has been amended to drive home the fact that applicant's electrical terminal is structured for mounting into a plug housing having pre-formed channels. Additionally, claim 1 has been amended to provide that the terminal blades include a web portion having a plurality of abutting undulations along opposite sides of the web defining barbs for abutting against a channel wall in the plug housing to resist removal of electrical terminal from the plug housing. These features are neither taught nor remotely suggested in Klumpp and therefore claim 1 and its dependent claims are believed to be patentable over Klumpp for this reason. (See discussion below regarding Klumpp, Jr. in view of Takemasa.)

The Examiner argues regarding independent claim 5 that Klumpp discloses a plug housing (10) with spaced apart channels and insulation piercing terminals as taught in the present application disposed in the channels. Applicant respectfully disagrees.

As noted above, Klumpp describes and claims a terminal for use in a molded-in-place plug housing where the plug is molded over the wires attached to the terminals. The Klumpp plug has no pre-formed channel as required in amended claim 5. Furthermore, consistent with the intended molded-in-place application contemplated in Klumpp, the Klumpp terminals include a tang or lug (31) which secures the terminal within the molded plug. *This tang or lug is consistent with the teaching of Klumpp and completely at odds with claim 5 since the tang or lug (31) would substantially interfere with placement of the terminal into a pre-formed channel.* It is therefore respectfully submitted that Klumpp neither teaches nor suggests the subject matter of amended claim 5 and its rejected dependent claims.

Claim Rejections – 35 U.S.C. § 103

Claims 4 and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Klumpp, Jr. in view of previously cited U.S. Patent No. 6,045,408 to Takemasa. The Examiner

argues that Klumpp discloses substantially the inventions of claims 4 (now canceled) and 12 but for the undulating barbs. He argues that Takemasa shows a plurality of undulating barbs to securely fasten a electrical terminal to a housing and that this is an art recognized equivalent to the retaining lug (31) of Klumpp. Applicant respectfully disagrees.

The retaining lug of Klumpp is intended to secure Klumpp's insulation piercing terminals within a *molded* plug, not a plug with pre-formed channels for receiving terminals. In fact, Klumpp's retaining lug would prevent insertion of the terminal into a pre-formed channel. Furthermore, Takemasa is concerned with electrical contacts for use in multiple contact circuit board-mounted electrical connectors, not electrical plugs as in the present invention. *Furthermore, the Takemasa contacts enter the connectors from the rear, not from the front as in the present invention as set out in amended claim 12.* The proposed reliance on Klumpp and Takemasa and the proposed combination of these references is therefore inappropriate and it is submitted that dependent claim 12 is patentable over these references.

Claims 13, 15 and 16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over earlier cited U.S. Patent No. 2,229,288 to Gilbert in view of Klumpp, Jr. The Examiner argues that Gilbert discloses substantially the claimed invention except for the specific crimping structure of the terminal and that it would have been obvious to form an interface between the conductors and terminals of Gilbert with a crimp structure as taught by Klumpp to provide a stronger mechanical interface between the terminals and the conductors. Applicant respectfully disagrees.

Claim 13, the only independent claim of this grouping, calls for the use of the specific inventive terminals of the present invention including an insulation piercing knife which works in conjunction with the method step of crimping of a flange for physically retaining the insulated wire. Gilbert requires insulation removal and pinching of contact legs against the exposed conductor and therefore does not render claim 13 obvious. Claims 15 and 16 which depend from claim 13 are believed to be patentable on the basis of the patentability of independent claim 13.

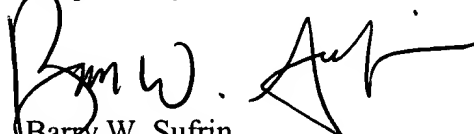
Claim 17 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert and Klumpp, Jr. in view of Takemasa. Claim 17 is a dependent claims which calls for the web portion of the blade of the electrical terminal to have a plurality of undulations formed along its opposite sides to define lance-formed barbs which abut against the plug housing and prevent removal of the electrical terminal by being pulled back through one channel and therefrom after

the insulated conductor end an electrical terminal have been inserted into the channel of the plug housing. This claim is believed to be patentable based both on the patentability of independent claim 13 and on the arguments advanced above as to the rear entry of the contacts described in Takemasa.

Claims 18 – 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert and Klumpp, Jr. in view of previously cited JP 09-213436 to Ozaki. The Examiner argues that Gilbert inherently discloses the method covered by these dependent claims except for the provision of a strip to align the terminals. The Examiner argues that Ozaki discloses the use of a strip to align the terminals and that it would have been obvious to use the strip to align the terminals and accelerate manufacture of the assembly. This claim is believed to be patentable based both on the patentability of independent claim 13 and because Ozaki does not appear to teach (no translation available) removal of a strip between terminals.

It is respectfully requested that these amendments be considered before issuing a further office action. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,


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